Name: **Diffusion Lab** Period:

Materials:

* 1 petri dish
* graph paper with coordinate system
* food coloring
* hot water/cold water

Procedure:

1. Place petri dish, centered, with cold or hot water on top of coordinate system.
2. Hold food coloring bottle one inch from petri dish center, and place 1 drop of food coloring into the center of the petri dish.
3. Use the clock, in ten second increments, and record the number of squares, on the data sheet, the drop has traveled. ONLY measure the distance the DARK circle has traveled. Continue measuring until 2 minutes has subsided.
4. Repeat steps 2 and 3 with the cold or hot water that wasn’t originally used.

Data Sheet:

|  |  |  |
| --- | --- | --- |
| Time (seconds) | Hot water – number of squares traveled | Cold water – number of squares traveled |
| 0 |  |  |
| 10 |  |  |
| 20 |  |  |
| 30 |  |  |
| 40 |  |  |
| 50 |  |  |
| 60 |  |  |
| 70 |  |  |
| 80 |  |  |
| 90 |  |  |
| 100 |  |  |
| 110 |  |  |
| 120 |  |  |

Analysis:

1. Compare your observations between the hot and cold water (3 differences)
2. How does this lab relate to diffusion?

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Data Sheet:

|  |  |  |
| --- | --- | --- |
| Time (seconds) | Hot water – number of squares traveled | Cold water – number of squares traveled |
| 0 | 1 | 1 |
| 10 | 1.2 | 1.5 |
| 20 | 1.5 | 1.8 |
| 30 | 2 | 2.1 |
| 40 | 2.2 | 2.2 |
| 50 | 2.5 | 2.4 |
| 60 | 2.8 | 2.5 |
| 70 | 3 | 2.7 |
| 80 | 3.1 | 2.9 |
| 90 | 3.5 | 3 |
| 100 | 3.7 | 3.1 |
| 110 | 4 | 3.2 |
| 120 | 4 | 3.5 |

Analysis:

1. Compare your observations between the hot and cold water (3 differences)

Hot – spread quickly; continual spread; spread further

Cold – didn’t spread as quickly; towards the end, it didn’t spread

1. How does this lab relate to diffusion?

It showed how molecules spread from an area of high concentration to an area of low concentration